

CLAIMS

What is claimed is:

1. A system for treating a flammable liquid fire associated with a tank having a roof and a substantially enclosed space above liquid in the tank and below the roof, comprising:

establishing a foam/film blanket over at least 90% of a surface of the liquid within the tank; and

discharging dry powder into a space between the roof and said blanket.

2. The method of claim 1 wherein the discharging step is subsequent to establishing at least two-thirds of an NFPA regulated foam/film blanket.

3. The method of claim 1 wherein the discharging occurs during the last 10 minutes of an NFPA regulated time of application of foam.

4. An industrial scale tank with a roof having a substantially enclosed space above a flammable liquid in the tank and below the roof, comprising:

at least one opening communicating with the space;

means associated with the tank for creating a foam/film blanket on the liquid; and

means associated with the at least one opening for discharging dry chemical into the space.

5. A fixed foam/dry chemical system for an industrial size tank with a roof having a space above a flammable liquid in the tank and below the roof, comprising:

at least one foam conduit fixed to the tank, in valved fluid communication with an interior of the tank; and

at least one dry chemical conduit fixed to the tank, structured for attachment to a source of dry chemical and in valved fluid communication with the space under the roof of the tank.

6. The apparatus of claim 5 including at least three said foam conduits spaced around the tank and at least three said dry chemical conduits spaced around the tank and structured such that at least one foam chamber and one dry chemical conduit communicate with the interior of the tank through one opening in a tank wall.

7. The apparatus of claim 5 including a nozzle for discharge of dry chemical attached to the dry chemical conduit.

8. A system for extinguishing a fire of a difficult to extinguish fuel or flammable liquid in a storage tank fitted with at least a significant fixed top roof portion, comprising:

discharging foam into a cavity above the fuel/liquid and below the fixed top roof portion; and

after at least two-thirds of the way through a NFPA-recommended application rate/duration procedure guideline for the foam attack, discharging dry chemical into a cavity above the fuel/liquid and below the fixed roof portion.

9. The system of claim 8 that includes discharging dry chemical in the last ten minutes of the NFPA recommended application rate/duration procedure guideline.

10. The system of claim 8 that includes discharging dry chemical for 5 to 15 seconds.

11. The system of claim 8 that includes discharging dry chemical after at least 40 minutes of foam application.

12. The system of claim 8 that includes discharging dry chemical through at least one tank vent.

13. The system of claim 12 wherein the vent is an eyebrow vent.

14. The system of claim 12 wherein the vent is a tank roof vent.

15. The system of claim 8 that includes a floater on top of the fuel/liquid and the discharging of foam and of dry chemical is a discharging into a cavity defined between the floater and the fixed top roof portion.

16. The system of claim 8 wherein the fuel or flammable liquid comprises a blended fuel.

17. Apparatus for extinguishing a difficult to extinguish fuel or flammable liquid fire in a storage tank with a fixed roof portion and at least one vent opening into a space defined above the fuel/liquid surface and a fixed roof portion, comprising;

a storage tank containing a difficult to extinguish fuel or flammable liquid and having a fixed roof portion defining a space or cavity above the fuel/liquid surface and below the fixed roof portion; and

a dry chemical supply pipe system rising along a portion of the tank wall having at least one end opening into a tank vent venting the space or cavity, the pipe system in fluid communication with a source of dry powder.

18. The apparatus of claim 17 wherein the supply pipe system has multiple ends inserted into multiple tank vents.

19. The apparatus of claim 17 wherein the vent comprises a wall eyebrow vent.

20. The apparatus of claim 17 wherein the vent comprises a roof vent.

5 21. The apparatus of claim 17 wherein the supply pipe system is permanently affixed to the tank.

22. The apparatus of claim 17 wherein the supply pipe system is portable.

23. The apparatus of claim 17 that includes a floater, and wherein the space defined above the fuel/liquid surface is space defined above the floater.

10 24. The apparatus of claim 17 wherein the difficult to extinguish fuel or flammable liquid comprises a blended fuel.